



RESEARCH FELLOW (PROTEOSTASIS)

DEPARTMENT/UNIT	Australian Regenerative Medicine Institute
FACULTY/DIVISION	Medicine Nursing and Health Sciences
CLASSIFICATION	Level A
DESIGNATED CAMPUS OR LOCATION	Clayton campus

ORGANISATIONAL CONTEXT

Everyone needs a platform to launch a satisfying career. At Monash, we give you the space and support to take your career in all kinds of exciting new directions. You'll have access to quality research, infrastructure and learning facilities, opportunities to collaborate internationally, as well as the grants you'll need to publish your work. We're a university full of energetic and enthusiastic minds, driven to challenge what's expected, expand what we know, and learn from other inspiring, empowering thinkers. Discover more at www.monash.edu.

The Faculty of Medicine, Nursing and Health Sciences is the University's largest research faculty. World-class researchers work across disciplines including laboratory-based medical science, applied clinical research, and social and public health research.

The faculty is also home to a number of leading medical and biomedical research institutes and groups, and has contributed to advances in many crucial areas: in vitro fertilization, obesity research, drug design, cardiovascular physiology, functional genomics, infectious diseases, inflammation, psychology, neurosciences and mental health.

Courses offered by the faculty include medicine, nursing, radiography and medical imaging, nutrition and dietetics, paramedic studies, biomedical sciences, physiotherapy, occupational therapy, behavioral neurosciences and social work. A range of research and coursework postgraduate programs is also offered. The faculty takes pride in delivering outstanding education in all courses, in opening students to the possibilities offered by newly discovered knowledge, and in providing a nurturing and caring environment. Further details may be found at: www.monash.edu/medicine/about-us.

Established through a joint venture between Monash University and the Victorian Government, the **Australian Regenerative Medicine Institute (ARMI)** builds on the University's existing strengths in biomedical research, and supports the critical infrastructure required to deliver the next generation of discoveries in regenerative medicine.

ARMI is located at one of the world's largest regenerative medicine and stem cell research centres, at the Clayton Campus. Its scientists are focused on unravelling the basic mechanisms of the regenerative process, enabling doctors to prevent, halt and reverse damage to vital organs due to disease, injury or genetic conditions.

To learn more about us and the work we do, [please visit our website](#).

The Nillegoda group is probing attractive new proteostasis-based directions for future therapeutic interventions that could potentially slow and/or reverse neurodegeneration and are applicable for a broad range of disorders from Alzheimer's disease to Multiple sclerosis.

POSITION PURPOSE

A Level A research-only academic is expected to contribute towards the research effort of the university and to develop their research expertise through the pursuit of defined projects relevant to the particular field of research.

The Research Fellow (Proteostasis) will support the Group Leader on a research grant titled "Identification of disaggregase modulators: a new class of anti-neurodegenerative drugs".

Neurodegenerative disorders such as Alzheimer's disease and Parkinson's disease are often characterized by the formation and persistence of protein aggregates (amyloids) in neuronal tissue that initiate the disease process by a gain-of-toxicity mechanism. Despite global efforts to bolster dementia research, there are currently no effective treatments or cures. Our ground-breaking research uncovered the primary protein aggregate solubilizing machine (disaggregase) constituted by the Heat shock protein 70 (Hsp70) chaperone system in human cells. This discovery introduced a previously unacknowledged metazoan cellular repair activity fundamentally important for decreasing cellular aggregate levels and the associated cytotoxicities linked to neurodegeneration.

The proposed work revolves around dissecting the gene regulators and identifying small molecule regulators of protein disaggregases, a first in the field - The small molecule regulators will provide the basis to develop a new class of anti-neurodegenerative drugs.

Reporting Line: The position reports to the Group Leader of the Nillegoda group

Supervisory Responsibilities: Limited (undergraduate and graduate students)

Financial Delegation: Not applicable

Budgetary Responsibilities: Not applicable

KEY RESPONSIBILITIES

Specific duties required of a Level A research-only academic may include:

1. The conduct of research independently (primarily) with limited supervision and participate as a member of a team (where appropriate), and the production or contribution to the production of conference and seminar papers and publications from that research
2. Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise
3. Limited administrative functions primarily connected with the area of research of the academic
4. Development of a limited amount of research-related material for teaching or other purposes with appropriate guidance from other staff
5. Occasional contributions to teaching in relation to their research project(s)
6. Experimental design and operation of advanced laboratory and technical equipment or conduct of advanced research procedures
7. Attendance at meetings associated with research or the work of the organisational unit to which the research is connected and/or at departmental, school and/or faculty meetings and/or membership of a limited number of committees
8. Advice within the field of the staff member's research to postgraduate students
9. Other duties as directed by the Group Leader from time to time

KEY SELECTION CRITERIA

Education/Qualifications

1. The appointee will have:
 - A doctoral qualification or near completion of a doctoral qualification with a thesis based on cellular protein quality control systems, molecular chaperones and proteostasis

Knowledge and Skills

2. Demonstrated strong report and publication preparation skills; including a strong track record of publications directly linked to proteostasis in peer-reviewed journals
3. Demonstrated experience in all the key techniques/methods such as experience in biochemical and biophysical techniques including protein purification methods, characterization, labelling, enzyme kinetics, and protein interactions (FRET- and anisotropy-based).
4. Demonstrated experience in basic molecular biology techniques such as vector design and molecular cloning, PCR methods, western blotting and immunoprecipitation. Having experience in mammalian cell culture, genetic modification of cells (stable cell lines; CRISPR-Cas9 gene editing; designing), immunohistochemistry, fluorescence/confocal microscopy and image processing are pluses.
5. Extensive knowledge in proteostasis, cellular protein quality control pathways, protein folding and molecular chaperones, protein aggregation and cellular stress pathways.
6. Ability to solve complex problems by using discretion, innovation and the exercise diagnostic skills and/or expertise.
7. Strong commitment to work, high motivation, passionate about research and demonstrated creativity, including the ability and willingness to generate and incorporate novel ideas and approaches into cutting-edge scientific investigations.
8. Well-developed planning and organisational skills, with the ability to prioritise multiple tasks and set and meet deadlines
9. Excellent written communication (English) and verbal communication skills (English) with proven ability to produce clear, succinct reports and documents
10. A demonstrated awareness of the principles of confidentiality, privacy and information handling
11. A demonstrated capacity to work in a collegiate manner with other staff in the workplace
12. Demonstrated computer literacy and proficiency in the production of high level work using software such as Microsoft Office applications and specified University software programs, with the capability and willingness to learn new packages as appropriate

OTHER JOB RELATED INFORMATION

- Travel to other campuses of the University may be required
- There may be a requirement to work additional hours from time to time, including weekends as required
- There may be peak periods of work during which taking of leave may be restricted

GOVERNANCE

Monash University expects staff to appropriately balance risk and reward in a manner that is sustainable to its long-term future, contribute to a culture of honesty and integrity, and provide an environment that is safe, secure and inclusive. Ensure you are aware of and adhere to University policies relevant to the duties undertaken and the values of the University. This is a standard which the University sees as the benchmark for all of its activities in Australia and internationally.